

CLAIM AMENDMENTS

This listing of claims will replace all prior versions and listings of claims in the application.

1 1. (Currently Amended) A mobile communication apparatus comprising a receiver,
2 a derotator, a demodulator and a processor wherein said receiver is connected to
3 said derotator, said derotator is connected to said demodulator, and said ~~controller~~
4 processor is connected to said receiver, said derotator, and said demodulator,
5 wherein said derotator comprises:

6 a first means for processing a Primary Common Control Physical Channel (P-
7 CCPCH) during a Space Time coding based Transmit Diversity (STTD)
8 transmission mode;

9 a second means for processing pilot symbols;

10 a third means for processing the symbols during closed loop transmission
11 modes; and

12 a fourth means for outputting the symbols to said demodulator in a temporal
13 orderedan interleaved sequence,

14 wherein said first, said second, said third, and said fourth means are
15 connected in series.

1 2. (Currently Amended) ~~A Mobile~~ The mobile communication apparatus according
2 to claim 1, wherein said first means is transparent to the symbols other than
3 symbols related to ~~Primary Common Control Physical Channel~~ the P-CCPCH
4 during ~~Space Time coding based Transmit Diversity~~ the STTD transmission mode.

5 3. (Currently Amended) ~~A Mobile~~ The mobile communication apparatus according
6 to claim 1, wherein said first means is ~~arranged to delete~~ deletes a first symbol
7 related to ~~Primary Common Control Physical Channel~~ the P-CCPCH of every slot
8 during ~~Space Time coding based Transmit Diversity~~ the STTD transmission mode.

9 4. (Currently Amended) ~~A Mobile~~ The mobile communication apparatus according
10 to claim 1, wherein said second means is transparent to ~~other~~ the symbols other
11 than pilot symbols.

12 5. (Currently Amended) ~~A Mobile~~ The mobile communication apparatus according
13 to claim 1, wherein said third means is transparent during ~~other~~ transmission
14 modes other than closed loop transmission modes.

15 6. (Currently Amended) ~~A Mobile~~ The mobile communication apparatus according
16 to claims 1, wherein said derotator comprises a plurality of two-position switches.

1 7. (Currently Amended) A method for derotation of received symbols in a mobile
2 communication apparatus, the method comprising the steps of:

3 processing a Primary Common Control Physical Channel (P-CCPCH) during
4 a Space Time coding based Transmit Diversity (STTD) transmission mode;
5 processing pilot-symbols;
6 processing the symbols during closed loop transmission modes; and
7 outputting the symbols in a temporal ordered-an interleaved sequence.

8 8. (Currently Amended) A Method-The method according to claim 7, wherein said
9 step of processing Primary Common Control Physical Channelthe P-CCPCH during
10 Space Time coding based Transmit Diversitythe STTD transmission mode
11 comprises:

12 deleting a first symbol related to Primary Common Control Physical Channel
13 the P-CCPCH of every slot during Space Time coding based Transmit Diversitythe
14 STTD transmission mode.

15 9. (Currently Amended) A Method-The method according to claim 7, wherein said
16 step of processing pilot-the symbols comprises processing a compressed mode by the
17 steps of:

18 summing two pilot symbols; and
19 dividing the sum of said two pilot symbols by two.

1 10. (Currently Amended) ~~A Method~~ The method according to claim 7, wherein said
2 step of outputting the symbols comprises:

3 dividing the symbols by two when transmit diversity is present.

4 11. (New) A derotator comprising:

5 a Primary Common Control Physical Channel (P-CCPCH) processor block
6 that receives despread symbols and processes the despread symbols;

7 a first derotator block that receives the processed symbols from the P-CCPCH
8 processor block, wherein the first derotator block further comprises:

9 a pilot derotator sub-block that operates only on pilot symbols within
10 the processed symbols from the P-CCPCH processor block and produces a
11 first signal wherein non-pilot symbols are unaltered,

12 a general derotator sub-block that receives the first signal from the
13 pilot derotator sub-block, applies different weights to the processed symbols
14 from the P-CCPCH processor block based upon whether a transmission mode
15 is closed loop, and produces a second signal; and

16 a second derotator block that receives the second signal from the general
17 derotator sub-block, performs switching operations based upon whether the
18 transmission mode is Space Time coding based Transmit Diversity (STTD), and
19 produces an output signal.

1 12. (New) The derotator of claim 11, wherein the P-CCPCH processor block further
2 comprises:

3 a first P-CCPCH processor switch that selectively forwards the despread
4 symbols based upon whether the transmission mode is STTD;

5 a second P-CCPCH processor switch that sends every despread symbol that is
6 a multiple of ten to a first dump.

7 13. (New) The derotator of claim 11, wherein the pilot derotator sub-block further
8 comprises:

9 a first switch that selectively forwards the processed symbols based upon
10 whether there is a compressed mode;

11 a compressed mode path comprising

12 a summer that adds two pilot symbols from the processed symbols to
13 produce a sum when there is a compressed mode, and

14 a bit shifter that divides the sum of the two pilot symbols by two;

15 a second switch that selectively forwards the pilot symbols based upon
16 whether the transmission mode is STTD; and

17 a third switch that selectively outputs the pilot symbols as the first signal
18 when a time instant is T1 or T3.

1 14. (New) The derotator of claim 11, wherein the general derotator sub-block
2 further comprises:

3 a plurality of switches that selectively forward the first signal based upon
4 whether the transmission mode is STTD; and

5 a plurality of multipliers that apply weights to the first signal based upon the
6 transmission mode and produce the second signal.

7 15. (New) The derotator of claim 11, wherein the second derotator block further
8 comprises:

9 a plurality of switches that selectively forward the second signal based upon
10 the transmission mode and whether a pilot field is present in the second signal; and
11 a switch that sends the second signal to a second dump when transmission of
12 P-CCPCH with STDD is present.

13 16. (New) The method of claim 7, further comprising:

14 dumping the symbols when transmission of P-CCPCH with STDD is present.

15 17. (New) The method of claim 7, further comprising:

16 determining whether two pilot bits or four pilot bits are used.

17 18. (New) The method of claim 7, further comprising:

1 determining whether Feed Back Mode 1 (FBM1) or Feed Back Mode 2
2 (FBM2) is used.

3 19. (New) The method of claim 7, further comprising:

4 dropping a Least Significant Bit (LSB) of intermediate signals when transmit
5 diversity is present.

6 20. (New) The method of claim 7, further comprising:

7 determining whether the transmission mode is STTD; and
8 ordering the symbols based upon the determining step.